AMENDMENTS TO THE CLAIMS:

Please amend claims 1, 2, 5, 12, 13, 27 and 28 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method of filtering data <u>including a computer readable storage medium comprising computer readable instructions implementing said method, said method</u> comprising:

applying a plurality of m filter coefficients which each have a value which is a negative power of two or is zero and which sum to one, to a plurality of m input data items to produce a filtered output data item, by performing a sequence of averaging calculations, said sequence of ~~average~~<u>averaging</u> calculations comprising:

averaging input data items to each of which a smallest filter coefficient is to be applied to produce first averaged data; and

averaging said first averaged data with other averaged input data or with input data items to which larger filter coefficients are to be applied, said plurality of m filter coefficients being applied to said plurality of m input data items via a sequence of averaging calculations such that a data width of any calculated data does not exceed that of said input data being averaged.

2. (currently amended) A method according to claim 1, wherein said sequence of averaging calculations ~~comprising~~<u>comprises:</u>

1226483

averaging two items of input data to which a smallest filter coefficient is to be applied to produce first averaged data; and

averaging said first averaged data with other first averaged data or with an input data item to which a filter coefficient that is twice as large as the smallest filter coefficient is to be applied.

3. (original) A method according to claim 1, said sequence of averaging calculations further comprising successive further averagings, wherein averagings are performed between sets of input data, the sets of input data comprising averaged input data or individual input data items, averages only being performed between sets of input data where the sum of the filter coefficients to be applied to each set of input data are equal.

4. (original) A method of filtering data according to claim 1, comprising repeatedly performing the method steps such that an array of m x n filter coefficients are applied to a plurality of m input data items to produce a plurality of n output data items.

5. (currently amended) A method according to claim 4, wherein said ~~step of performing a~~ sequence of averaging calculations includes selecting the input data that is to be averaged in dependence upon the frequency that two pieces of input data have common filter coefficients applied to them, and where possible selecting to average two pieces of data that have common filter coefficients applied to them a plurality of times, such that the calculated average of the input data can be re-used.

6. (original) A method according to claim 1, comprising the further step of, prior to applying said plurality of filter coefficients to said input data, arranging said coefficients such that they all have values that are a negative power of two and they sum to one.

7. (original) A method according to claim 6, wherein said step of arranging said filter coefficients such that each coefficient has a value that is a negative power of two, comprises splitting any filter coefficient that does not have this property into a sum of components, each component having a value that is a negative power of two.

8. (original) A method according to claim 1, wherein said filter coefficients relate to a low-pass filter.

9. (original) A method according to claim 8, wherein said filter coefficients relate to a deblocking filter.

10. (original) A method according to claim 1, wherein said input data relates to an array of pixels.

11. (original) A method according to claim 10, wherein said input data comprises an array of ten pixels, said filter coefficients being such that output data comprises an array of eight pixels.

1226483

12. (currently amended) A computer program product comprising a computer readable storage medium containing computer readable instructions for applying a plurality of m filter coefficients to a plurality of m input data items, said computer program product comprising:

filtering logic operable to control a processor to combine filter coefficients which each have a value that is a negative power of two and that sum to one, with a plurality of m input data items to produce a filtered output data item, by controlling said processor to perform a sequence of averaging calculations, said sequence of averaging calculations comprising:

averaging input data items to which a smallest filter coefficient is to be applied to produce first averaged data; and

averaging said first averaged data with other averaged input data or with input data items to which larger filter coefficients are to be applied, said plurality of m filter coefficients being applied to said plurality of m input data items via a sequence of averaging calculations such that a data width of any calculated data does not exceed that of said input data items.

13. (currently amended) A computer program product according to claim 12, wherein said sequence of averaging calculations comprises:

averaging two items of input data to which a smallest filter coefficient is to be applied to produce first averaged data; and

averaging said first averaged data with other first averaged data or with an input data item to which a filter coefficient that is twice as large as said smallest filter coefficient is to be applied.

1226483

14. (original) A computer program product according to claim 12, said sequence of averaging calculations further comprising successive further averagings, wherein averagings are performed between sets of input data, said sets of input data comprising averaged input data or individual input data items, averages only being performed between sets of input data where the sum of the filter coefficients to be applied to each set of input data are equal.

15. (original) A computer program product of filtering data according to claim 12, wherein said filtering logic is operable to control said processor to repeatedly perform said sequence of averaging calculations such that an array of m x n filter coefficients are applied to a plurality of m input data items to produce a plurality of n output data items.

16 (original) A computer program product according to claim 15, wherein said filtering logic is further operable to control a processor to select pairs of input data items that are to be averaged in dependence upon the frequency that said pairs of input data items have common filter coefficients applied to them, such that where possible two input data items that have common filter coefficients applied to them a plurality of times are selected, such that a calculated average of the input data can be re-used.

17. (original) A computer program product according to claim 12, further comprising:

coefficient arranging logic arranged prior to said filtering logic and operable to control a processor to arrange said filter coefficients such that each coefficient has a value that is a negative power of two and the coefficients sum to one.

18. (original) A computer program product according to claim 17, wherein said coefficient arranging logic is operable to control a processor to split any filter coefficient that does not have a value that is a negative power of two into a sum of components, each component having a value that is a negative power of two.

19. (original) A computer program product according to claim 12, wherein said filtering logic comprises a low-pass filter.

20. (original) A computer program product according to claim 19, wherein said low-pass filter comprises a deblocking filter.

21. (original) A computer program product according to claim 12, wherein said input data relates to an array of pixels.

22. (original) A computer program product according to claim 21, wherein said input data comprises an array of ten pixels, said filter coefficients being such that filtered data comprises an array of eight pixels.

23. (original) A computer program product according to claim 12, wherein said input data items each comprise 8 bits.

24. (original) A computer program product according to claim 12, wherein said filtering logic comprises a plurality of SIMD instructions.

1226483

25. (original) A computer program product according to claim 24 when dependent on claim 23, wherein said filtering logic is operable to process four input data items in parallel.

26. (original) A computer program product according to claim 24, wherein said filtering logic is operable to set the carry flag to indicate if said filtered output data is to be stored or discarded.

27. (currently amended) A data processing apparatus comprising a processor ~~operable to filter~~including a computer readable storage medium, said processor for filtering input data, said data processing apparatus comprising:

filtering logic ~~operable to control~~for controlling the processor to apply a plurality of m filter coefficients which each have a value that is a negative power of two and which sum to one, to a plurality of m input data items to produce a filtered output data item, by controlling said processor to perform a sequence of averaging calculations, said sequence of averaging calculations comprising:

averaging input data items to which a smallest filter coefficient is to be applied to produce first averaged data; and

averaging said first averaged data with other averaged input data or with input data items to which larger filter coefficients are to be applied said plurality of m filter coefficients being applied to said plurality of m input data items via a sequence of averaging calculations, such that a data width of any calculated data does not exceed that of said input data.

1226483

28.(currently amended) A data processing apparatus according to claim 27, wherein said

sequence of averaging calculations comprises:

averaging two items of input data to which a smallest filter coefficient is to be applied to

produce first averaged data; and

averaging said first averaged data with other first averaged data or with an input data item

to which a filter coefficient that is twice as large as said smallest filter coefficient is to be

applied.

29. (original) A data processing apparatus according to claim 27, said sequence of

averaging calculations further comprising successive further averagings, wherein averagings are

performed between sets of input data, said sets of input data comprising averaged input data or

individual input data items, averages only being performed between sets of input data where the

sum of the filter coefficients to be applied to each set of input data are equal.

30. (original) A data processing apparatus according to claim 27, wherein said filtering

logic is operable to control said processor to repeatedly perform said sequence of averaging

calculations such that an array of m x n filter coefficients are applied to a plurality of m input

data items to produce a plurality of n output data items.

31. (original) A data processing apparatus according to claim 30, wherein said filtering

logic is further operable to control said processor to select said input data that is to be averaged

in dependence upon the frequency that two pieces of input data have common filter coefficients

1226483

applied to them, and where possible to select to average two pieces of data that have common filter coefficients applied to them a plurality of times, such that the calculated average of the input data can be re-used.

32. (original) A data processing apparatus according to claim 27, further comprising coefficient arranging logic, said coefficient arranging logic being operable before said filtering logic to control said processor to arrange said filter coefficients such that each coefficient has a value that is a negative power of two and said coefficients sum to one.

33. (original) A data processing apparatus according to claim 32, wherein said coefficient arranging logic is operable to control a processor to split any filter coefficient that does not have a value that is a negative power of two into a sum of components, each component having a value that is a negative power of two.

34. (original) A data processing apparatus according to claim 27, wherein said filtering logic comprises a low-pass filter.

35. (original) A data processing apparatus according to claim 27, wherein said input data relates to an array of pixels.

36. (original) A data processing apparatus according to claim 35, wherein said input data comprises an array of ten pixels, said filter coefficients being such that filtered data comprises an array of eight pixels.

1226483

37. (original) A data processing apparatus according to claims 27, wherein said input data items each comprise 8 bits.

38. (original) A data processing apparatus according to claim 27, wherein said filtering logic comprises a plurality of SIMD instructions.

39. (original) A data processing apparatus according to claim 38 when dependent on claim 37, wherein said processor comprises 32 bit registers which are operable to process four input data items in parallel.

40. (original) A data processing apparatus according to claim 38, said processor further comprising at least one carry flag, said filtering logic being operable to set said carry flag to indicate if filtered output data is to be stored or discarded.

1226483